

until April 2. On the 4th it progressed rapidly toward the Kuril Islands, on the way causing fresh to strong gales east of Yezo, and was central somewhere south of Kamchatka on the 5th.

The only other known typhoon of the month was a small but violent storm which crossed the Philippines on the 18th-19th. The Bureau has no vessel weather report of this disturbance, but its history is given in the subjoined article by the Rev. José Coronas, S. J., of the Philippine Weather Bureau.

A weak depression, which seems to have formed south of Japan about the 8th, moved northeastward and had gained some considerable energy by the 10th. On this date, in about 38° N., 157° E., the British tanker *Tamaha* encountered the cyclone as a whole gale. Violent winds, up to force 11, were experienced until the morning of the 11th, when the storm abated. The *Tamaha's* lowest barometer was 29.05 inches.

Except in connection with the fluctuating disturbances peculiar to the Aleutian region, there seem to have been no other cyclones of importance west of the one hundred and eightieth meridian. Gales, however, were more frequent along the northern routes west of this meridian than east of it. From Japan eastward to about 160° E. most gales occurred during the first decade of the month, with a scattering few in the third. Between 160° E. and 180° the great majority were a product of the second decade.

In west longitudes no gales of force exceeding 10 have as yet reported. The early disturbance in the Gulf of Alaska, already referred to, created some rough weather north of the fortieth parallel on the 1st to 4th, the worst evidently occurring on the 4th, when a whole gale was encountered near 45° N., 140° W. On this date also Tatoosh Island, then on the extreme eastern edge of the huge cyclone, had a maximum wind velocity of 58 miles an hour (force 10) from the south.

On the 10th a depression formed in about 20° N., 132° W. and began working northward across the California-Hawaiian routes. By night of the 12th it lay off the coast between northern California and British Columbia, and by morning of the 15th had practically disappeared from the ocean area. It caused some squally weather and moderate gales during its northward passage, with a maximum wind force of 9 from the south-southeast on the 13th, near 34° N., 146° W.

About the 14th a moderate cyclone developed in middle latitudes, central near longitude 155° W. It moved rather slowly eastward and northward, spreading considerably in area for several days. By the 23d it lay principally over the Gulf of Alaska, where it remained as an individual disturbance until the 28th, when it became amalgamated with the intense cyclone then central over the eastern waters of the Bering Sea. During its course it acquired only moderate wind and barometric intensity, although fresh to strong gales were experienced in scattered positions between 30° and 50° N., 130° and 160° W., from the 15th to the 21st.

Few winds of gale force were reported from or near the Tropics. These few include moderate to strong anti-

cyclonic gales southwest and south of Midway Island on the 1st and 2d, and northerly of force 7-8 over and near the Gulf of Tehuantepec on the 6th and 12th. At Salina Cruz Tehuantepecers exceeding 45 miles an hour (force 8 and upward) were reported as follows: 7th, 60 miles; 8th, 60; 12th, 48.

The prevailing wind direction at Honolulu was from the east, and the maximum velocity was at the rate of 27 miles an hour from the east on the 12th.

Fog generally was more frequent along the upper steamship routes west of longitude 150° W., and along the coast of the United States, than in March. It was reported on 5 to 7 days in the various 5° squares in upper middle longitudes south of the Aleutian Islands; on 7 days between the fortieth parallel and the Kuril Islands; on 6 to 8 days off the California coast; on 4 to 5 days off the Washington and Oregon coasts; and on 3 days near shore at the mouth of the Gulf of California. Elsewhere, north of the thirtieth parallel, scattered fog occurred variously on from 1 to 4 days.

#### TYPHOONS AND DEPRESSIONS

##### THE FIRST TYPHOON OVER THE PHILIPPINES IN 1930: APRIL 18 TO 19

By Rev. JOSÉ CORONAS, S. J.

[Weather Bureau, Manila, P. I.]

The first typhoon that visited the Philippines this year was rather of a very small diameter, but very intense while traversing the Visayan Islands. The origin of this small typhoon is not clear up to this time. Its center was situated at 6 a. m. of the 18th about 60 or 70 miles to the northeast of Surigao moving west by north. At about noon of the same day it passed very near to the south of Guiuan, southern coast of Samar, where the barometric minimum 747.50 millimeters (29.43 inches) was recorded at 12.30 p. m. Then it passed at 6.40 p. m. close to the north of Ormoc, northern part of Leyte, causing the barometer to fall to 740.91 millimeters (29.17 inches). During the morning and first hours of the afternoon of April 19 it crossed the northern part of Panay Island near the northern coast, and south of Capiz, where the barometric minimum 748.35 millimeters (29.46 inches) was observed at 10 a. m.; the small typhoon was still intense and continued moving to west by north. From Panay the typhoon took a west-northwest direction, and probably filled up soon over the China Sea about 250 miles to the west of northern Mindoro.

The area of destruction of this typhoon was small, but in this area the damage caused by winds of a gale or hurricane force and by heavy rains was very considerable.

The approximate position of the center at 6 a. m. and 2 p. m. of April 18, 19, and 20 was as follows:

April 18, 6 a. m.-----	126° 15' longitude E., 10° 40' latitude N.
2 p. m.-----	125° 10' longitude E., 10° 55' latitude N.
April 19, 6 a. m.-----	122° 50' longitude E., 11° 15' latitude N.
2 p. m.-----	121° 50' longitude E., 11° 35' latitude N.
April 20, 6 a. m.-----	118° 40' longitude E., 12° 55' latitude N.
2 p. m.-----	116° 20' longitude E., 13° 40' latitude N.